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CONTENTS

		Page
P. Das	Cognitive styles of tribal and non-tribal Children.	1
R. D. Girach, Z. A. Ali & Amir Abbas.	THOKRAIN : An indigenous lighter used by the tribals of Similipal, Mayurbhanj.	6
Illie Chakravarti	Study of Women Development in a changed economy with special reference to tribal women in Rajasthan.	9
S. K. Rout & B. Parasar	Attitude of tribal farmers toward credit	14
Manoranjan Acharya	Changing eco-system of the tribal with special reference to deforestation and Forest Policy.	17
S. N. Tripathy	Tribal Development Programmes in Phulbani, Orissa : A Review.	23

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This is a quarterly journal dealing with articles and research findings in various social sciences, developmental strategies and other co-related matters emphasising the problems of the Scheduled Castes and Scheduled Tribes. It also publishes reviews of books pertaining to the aforementioned subjects.

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Cognitive styles of tribal and non-tribal Children

P. Das

Cognitive style is conceptualised as individual differences in preferred (or habitual) ways of processing information for the solution of perceptual and intellectual tasks. Among the cognitive styles identified to date, the field—dependence—Independence dimension has been the most extensively studied and has had the widest applications to educational problems (Witkin, Dyke, Fetserson, Goodenough and Karp, 1962; Witkin, Lewis, Hertzman, Machover, Meisner and Wapper, 1964; Witkin, 1976).

There are several studies (Farr 1969; Frederick, 1967; Greenfield; 1970; Hunt and Randhwa, 1973; Dash, 1982) which have examined the relationships between cognitive style and concept learning, problem solving achievement and established that the difference in performance is function of cognitive style. This relationship is of particular concern to teachers because of their interest in having students learn concepts, solve problems rather than facts alone. Since cognitive styles tend to be stable overtime (Witkin, Goodenough and Karp, 1967) it becomes necessary to identify the cognitive style of children of various socio-cultural background quite early in development and develop diversified teaching approaches for facilitating optimum learning.

The purpose of the present study is to examine the cognitive style of tribal and non-tribal primary School children.

Hypotheses

1. There will be significant differences among children varying in age (or class) for each of the measures of cognitive style.

2. There will be significant differences among tribal and non-tribal children for each of the measures of cognitive style.

3. There will be significant interactive relationship between age and social groups with regard to cognitive style tasks.

Subjects

The present study involved one hundred and fifty boys of classes between 1 and 5 of Orissa. Boys for each class were divided into tribal and non-tribal groups. Non-tribal group has been further divided into High S.E.S. and Low S.E.S. groups. Each sub-cultural group under each age span consist of 25 boys giving rise to 75 under 7 years and 75 above 10 years of age.

Tools

The following tests were administered to all children as measures of field dependence—Independence (Witkin et al. 1962) and reflection impulsivity (Kagan et al 1964) which are considered as important dimensions of cognitive style.

Children Embedded Figures Test (CEFT)

This test initially developed by Goodenough and Eagle (1963) and subsequently developed by Karp and Konstadt consists of drawings of familiar objects, so drawn as to embed in the simple form to Tent and House. The test consists of a series of complex figures 11 of which (T_1 — T_{11}) have the simple Tent figures embedded in them and 14 of which (H_1 — H_{14}) have the simple House figures embedded in them. The child was asked to find the hidden Tent and House by comparing with the simple

cut-out form of Test and House supplied to him. Responses were scored 1 or 0 according to correct or incorrect. The total score was the number of items answered correctly, the maximum being 15.

Matching Familiar Figure Test (MFFT)

This test was developed by Kagan, Rosman, Day, Albert and Phillips (1964) as the measure of reflection-impulsivity, which is another important dimension of cognitive style. It consists of 12 sets of pictures. In this test

subjects are required to select from a number of options the figures that is identical to a given figure. Both errors and response times are recorded. Children who respond quickly are called 'impulsives', whereas those who pause to reflect on response alternatives, that are more often correct are called 'reflectives'. Messer (1976) used this test as a measure of discrimination because of the nature of the task and the processes involved in it. Kagan (1965) already indicated that low impulsiveness (reflection) was associated with greater success in School.

Results and Discussion

The means and standard deviations of the tests are presented in Table-1 for tribal and non-tribal groups. In order to examine the significance of differential performance of tribal and non-tribal children on each of the measures of cognitive style a 2 (Age) \times 3 (Social groups) factorial analysis of variance was computed and is given in Table-2.

Table-1

Means (M) and Standard deviations (S.D.) of Cognitive style test scores for classes between 1 and 5 tribal and non-tribal children

Test	Class	Tribal		Non-tribal			
		M	SD	Low		SES	
				M	SD	M	SD
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CEFT	1	7.04	3.01	10.12	2.49	13.08	4.01
	5	13.04	3.68	14.08	2.72	18.84	2.17
MFFT (Response time)	1	173.36	62.18	135.04	77.96	182.60	98.31
	5	313.76	143.93	309.20	116.41	224.00	111.63
MFFT (Errors)	1	21.32	8.78	22.60	5.92	14.12	5.43
	5	10.28	3.87	11.96	4.77	8.20	3.39

Table-2

Summary of two-way Analysis of variance for classes between 1 and 5 (Age) and tribal and non-tribal children (Social groups)

Test		F-ratio		
		Age	Social groups	Age \times Social groups
CEFT	..	108.576**	47.265**	1.490+
MFFT (response time)	..	46.952**	1.832*	5.189**
MFFT (errors)	..	99.811**	16.030**	3.167*

* $p < 0.05$

** $p < 0.01$

+Not significant

It is quite clear from Table-1 that on all cognitive style measures higher age-group children performed better than lower age-group children irrespective of social groups. Further it is also apparent that the performance of tribal and low SES non-tribal children on CEFT and MFFT are very much similar at both age levels.

In the field independence dimension, class 5 children are superior to class 1 children as revealed from the mean scores of CEFT. Although the order of performance follows a decreasing pattern from high SES non-tribal through low SES non-tribal to tribal children there exist significant differences among these groups as far as their cognitive styles or processing modes are concerned. The analysis of variance of CEFT further indicates that main effect for age and social group are significant. The non-significant age and Social group interaction indicates that the relative performance of social groups (tribal and non-tribal) does not alter as a function of age or schooling. This finding has cross-cultural support from the studies of Kagan and Klein (1973), Kaul (1981), Vigliani (1973).

In order to validate the findings of CEFT, MFFT was used to assess impulsive and reflective nature of children. These abilities are usually considered as important dimensions of cognitive style. As expected, the mean scores of MFFT revealed that the response latency of older children was more than younger children. High SES non-tribal children under seven took more time as compared to low SES non-tribal and tribal children. But in case of children above 10 it was found that high SES non-tribal children took less time as compared to low SES non-tribal and tribal children. The main effect for age is significant which suggests that younger children are more impulsive than older children. The main effect for Social groups is not significant. However, the interaction between age and Social groups is significant which suggests that the relative performance of social groups is related to age or schooling.

Further, the magnitude of errors on MFFT for tribal and non-tribal children is more than high SES non-tribal children. One striking feature of the above result is that low SES non-tribal children have committed more errors than tribal children at both age levels. This was due to the fact that the response latency

of tribal children was more than their low SES non-tribal counterparts. There is a clear cut independent effect at both age and social group. This enables the researchers to say that younger children are more impulsive in character and commit more errors as compared to older children. Further the magnitude of errors is also related to social background or environmental factors. This results is consistent with the findings of Das (1985), Mitchelmore (1974) who obtained similar developmental trends using CEFT and HFT respectively. The interaction between age and social groups is also significant.

The above findings clearly demonstrate that tribal children and low SES non-tribal children are less field independent/reflective than high SES non-tribal children. Kagan (1965), Miller and Mumbaker (1967) also reported that reflective tendency is related to social class, intellectual ability, and higher reading achievement. Lack of reflective tendency of socially disadvantaged children is well related to their failure experiences in academic pursuits. Their ability in complex learning situations is greatly retarded. Therefore, it can be stated that reflectivity is a matter of age progression as well as adaptation to the immediate environment. Since tribal children and low SES non-tribal children remain in a poor socio-cultural environment their response style seems to be more impulsive. This impulsive or field-dependent character of disadvantaged children is one of the major causes of their poor learning and achievement. Learning is definitely not a simple association of information or facts but the organisation of learning materials and its way of presentation are quite important. Therefore, it is quite essential for the teachers to develop appropriate learning materials or tasks and present in a proper sequence keeping in view the style of cognitive functioning of children. In other words, the style of teaching should be matched with the style of learning so that children who are incapable of self instruction due to their ecological reasons derive maximum benefits. The studies on compensatory education programme (Jensen, 1969) reported various remedial approaches to reduce the deficits and gaps. The pattern drill approach (Bereiter and Engelman, 1966), early stimulation strategies (Kagan, 1975) and the enrichment programme (Klaus and Grey, 1968) have wider implications in teaching learning process. The processing style is more important

and should be nurtured from the beginning. The longitudinal study of Spicker Hodges, McCandless (1967) made a headway in emphasizing the processes especially cognitive, perceptual and linguistic of socially dis-advantaged children. The extensive researches on cognitive style by witkin et al. (1954), witkin (1976) suggest that cognitive style approach may be applied with profit to a variety of educational issues. It accordingly seems to bring to the attention of

educators the concept of cognitive style in general and the work on field-dependence— independence in particular, which at the moment appears to have clearest implications for classroom teaching—learning problems. The findings of present investigation open up new awareness and competencies for conducting remedial and intervention programmes for children with lower social background quite early in development.

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THOKRAIN—

An Indigenous lighter used by the tribals of Similipal, (Mayurbhanj)

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Amir Abbas

Introduction

Similipal hills cover about 50 per cent of the forest area of Mayurbhanj district. It is the home of many tribes. Tribals like Bathudi, Kol, Ho and others live in Similipal hills. They are still secluded from civilisation and maintain their traditional heritage. They depend upon surrounding plants for their various requirements. Their life is closely interwoven with forests, many amenities to fulfill their basic needs have not yet reached them; as such they have developed methods to produce fire, using indigenous sources.

During authors ethnobotanical tour to the area in February-March 1985, it was observed that tribals in some of the villages (Sankasira, Kumari) still use traditional indigenous methods for producing fire.

In this communication, the traditional method of preparation of lighter, its parts and the process of lighting fire are described for ethnobotanical record. Information is also given on some of the plants used by the tribals to produce fire.

Indigenous Lighter

Bamboos (Gramineae) are of great importance to the indigenous people of Orissa. Bamboo provides raw material for building houses, fishing nets and many household articles (N. Patnaik and Das Patnaik, 1982). Culin of Bamboo are used for various purposes by the tribals.

The use of bamboo culm as one of the raw materials for making indigenous lighter is not reported so far from Orissa.

In Similipal hills of Orissa, tribals use bamboo culm, specially of the genus *Dendrocalamus* as the raw material for indigenous lighter, referred to in Similipal hills as 'Thokrain'.

Previous references to the use of plants by the tribals to produce fire are reported by Saxena et al (1981) and Patnaik and Das Patnaik (1982).

Several informants belonging to tribal community were interviewed concerning the method of preparation and use of lighter in Sankasira, Kumari and gurguria villages of Similipal. Tribals provided an excellent source of information and further demonstrated the process of producing fire.

Preparation

Bamboo culms (not further identified) are selected on the basis of their length and diameter. The culms 10–15 cm. long, having internode in between with diameter about 2.5–3.5 cm, thickness of 2 mm, is considered suitable raw material. Internode provides a natural partition between two hollow ends of a culm. Culm is scrapped at internode and at the ends with Keti (Knife) to make it smooth and handy. (Fig. A & B).

Tusser—An indigenous plant, locally known as Asan, (*Terminalia tomentosa*), a tree belonging to family combretaceae, commonly met with in

Similpal hills, is one of the suitable hostes for Tusser (silk worm pupae). The empty shells are collected from the host plant and used as lid to cover the hollow ends of culm. The shell is cut transversely into two equal halves. Each half of an empty shell is scrapped in such a way that it fits tightly on the end of the culm.

Thread—It is obtained from the woody climber. A multipurpose plant for the tribals locally known as sisli (*Phanera integrifolia*) belonging to caesalpiniaceae abundantly growing in the area.

Upper half of the tusser shell is threaded at the top with a knot and upper end of the thread is tied in the hook made into the piece of iron (A knife-like structure).

Cotton—The fibre from the fruits of Simuli (*Bombax ceiba*), a tree with thorny stem and twigs having scarlet large flowers belonging to the family Bombacaceae, frequently seen in the area is collected in March-April and preserved to use as cotton in the upper hollow end of the culm.

Flint—Three to four pieces of Flint stone, locally known as Chakmak, are collected from the river banks and stored in the lower half of the culm. Both the ends of culm are tightly fitted with tusser halves. (Fig. A & B.)

The typical lighter 'Thokrain' will only measure 15—18 cm. in length and 4.5 cm. in diameter which may easily be carried in a pocket. Tusser cover helps to protect cotton (Simuli) from rain as well as to extinguish fire particles of cotton. Life of the Thokrain can be increased if cotton (Simuli) and flint stones are replaced regularly. For this purpose tribals collect Simuli cotton during the season (March-April) and preserve it for future use. Dry cotton is said to be good for smooth functioning of the lighter.

Cotton obtained from Kappa (*Gossypium* sp.) may also be used if simuli cotton is not available. One of the informant said that Simuli cotton is better than Kappa cotton for the purpose.

Process of Lighting a Fire

The method is based on the principle of percussion. In this method only a piece of flint and piece of iron are required. Use of flint stone to light a fire is the old practice which is still prevalent in some of the tribal villages of Similpal hills.

Process of lighting a fire by Thokrain was demonstrated by one of the tribal inhabitants of Sankasia village.

A piece of Flint is taken from the lower half of the culm. Upper half is also opened so that dry cotton of Simuli is exposed. The wooden holder (culm) is held in the left hand between palm of thumb and first finger. Flint piece is held tightly at the edge of the top of wooden holder. The piece of iron is held in the right hand. The latter is struck directly against the flint and the sparks which are generated thereby come in contact with cotton and that catches fire which is sufficient to light a bidi (A type of cigar) for smoking crushed tobacco wrapped in sal (*Shorea robusta*) leaves. After the process, the lids are covered again.

It may easily be carried in a pocket or hand. (Fig. C). It was quite common to see the men folk walking with 'Thokrain' hanging in right hand and bidi prepared from Dhimla (Tobacco) crushed leaves wrapped in sal leaves placed on the ear. It is also used in the house to produce fire for cooking purpose, and to produce fire at night around the house to keep off wild animals.

In addition to the method of producing fire by percussion. It was observed by the authors that fire making through wood friction was also done in other areas (Chahia, Nohna). In this method, two pieces of dry twigs (Bark removed) 20—25 cm. long of *Moringa oleifera* locally known as 'Sahanjana', a lightwooded tree of family Moringaceae are selected for the purpose. The tree is commonly found around habitations. It is grown for its flowers, fruit (Drum-Stick) and leaves. They are used as vegetables after cooking.

Dry twigs are made into wooden cylinders. In one cylinder, circular grooves are made with a small slit at a slant in it, approximately 2 cm. apart from each other. The lower end of other cylinder is sharpened in such a way to fit in the circular groove (Hearts) of the first cylinder.

The cylinder with circular grooves is kept on a dry leaf. A pinch of fine sand is kept in a heart, drilling with the second cylinder produces friction, as a result sand of the heart becomes hot and falls through the slit on the dry leaf in the process lighting it. Such a fire producing method is however time consuming, unlikely to be durable and tribals passing through the jungle carry with them for immediate use.

Because of the light and soft twigs they easily break and may be unavailable in certain forest areas of human activity. However this may be considered as temporary method. Other plants used by the tribals for producing fire through friction are *Nyctanthes arborescens* L. (Godkhudika, Canton. oblongifolia (Maha Sindhu), *Premia latifolia* and *Adina* (Cordifolia Mundi).

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Explanation of figures.

Fig. A. (a) Thokrain—Indigenous lighter

(b) Various components of thokrain

1. Tusser shell (Halvas), 2. Bamboo culm, 3. Nodal region, 4. Thread, 5. Iron piece,
6. Flint stone, 7. Simuli cotton.

Fig. B. Friction method of lighting

I. Wooden cylinder with circular grooves

II. Cylinder with sharp end, III. Sand, IV. Dried leaf, V. Slit, VI. Hearth (Groove),

VII. Direction of drilling.

Fig. C. Tribal men holding indigenous lighter.

Study of Women Development in a changing economy with special reference to tribal women in Rajasthan

Ila Chakravarti

Introduction

Women as human resource factor account for development of a society and this has been given emphasis in recent years, which is reflected in the programmes for women development and the increasing literature on women development studies. Women as a group is disadvantaged due to socio-economic condition, as a result, women are often denied or not able to avail equal opportunities in improving their lot regarding skill, knowledge and do not have more time and energy for achieving these. Over and above, they face discrimination and segregation in regard to job and pay. But all the women can not be put in the same category. Women belonging to weaker section are worse off. Again, in this group the problem of tribal women needs special attention as the tribals are a particularly disadvantaged community whose culture and life were marked by homogeneity earlier, has disintegrated after they came in contact of the non-tribals. Tribal economy is operating at a very low level and majority of tribal areas remain isolated and backward. Tribal areas are characterised by socio-economic exploitation of non-tribals but the tribals still maintain their culture and heritage which influence their activities. It has been observed that 'among many motives and incentives which stimulate 'pre-literate' men to work in some cultures, the religion is prominent. Thus the pastoral people of Africa rear cattle in order to sacrifice some of them to God while the Bhils of India practise the system of cultivation transmitted to them as they believe by their God Raja Pantha.¹ Possibly this fact somewhat explains the slow adoption of New Technology by the tribals in Rajasthan with res-

pect to agriculture and it is connected with cultural and social pattern; economic considerations are not the only motivating factor.

In India, development efforts are being made since independence but in this process 'development activities have not led to active involvement of women'.² Although social change in the value system is necessary for improving the status of women yet the activities relating women development are to be accelerated. Studies available on tribal women in Rajasthan deal with social aspect and dearth of literature on economic aspect related to work participation, nature of jobs done and their future prospects has led to present study. An analysis on work pattern has been attempted on the basis of latest available Census of 1961 and the programmes drawn in Seventh Five Year Plan (1985-90). In particular, have been discussed here. In this paper an attempt has been made to study the position of tribal women with special reference to Bhil women in Udaipur, Rajasthan State in India and the development efforts that are being initiated for their economic upliftment.

Basic Features

The question of economic upliftment has to be seen in a particular framework in which the tribal women operate. The basic features are primarily as follows:

A. A typical tribal economy is not a market economy or in other words they are subsistence; Economies: wherever they are producing greater part is consumed by themselves. In Tribal Sub-Plan (TSP) area of Rajasthan, 45-49 per cent of the farmers have less than 1 hectare of land as

their holding. They produce only subsistence goods so their level of income is low. Provision of off-season employment here becomes of utmost importance to ward off hunger in those years even in normal times.

B. Tribals do not work only for economic motives; they value other things more in life such as, desire for sustenance, conformity to tradition, recognition for work well done by the group.

C. Labour division, based on sex differences is present everywhere but reduced to a minimum in the food gathering stage. In a simple and pure tribe society, wife participates on equal footing with her husband in the struggle of life and is also equal nearly in status. But this position changes when the tribal comes in contact with non-tribals and/or food producing stage such as agricultural and pastoral. In case of Bhils, changes came in their cultural and social life after their contact with non-Bhils, especially Rajputs. Certain rights practised by the Rajputs, e.g., during a marriage, were adopted by the Bhils; the use of 'purdah' is another custom which the Bhils adopted. They also learnt about settled and improved farming methods and gradually gave up their 'slash and burn' cultivation. At the level of ideas, concepts like pollution, untouchability, subordination-superordination etc., and its major rules, came within the knowledge of the Bhils. Regarding the Bhil women the division of labour between the males and females have fallen very heavily on that of women.⁵ A Bhil woman of Rajasthan works in home as well as in the field with her husband. She works as labour in the field, construction works and supplements the income of the family by working as a casual labour during off season and also participates in agricultural operations in their fields. Parents demand bride price or 'dips' at the time of marriage of the girl and this may be due to the fact that a Bhil daughter starts sharing economic burden from a very early age and as such is considered as an economic asset.

D. The principle of descent whether patrilineal or matrilineal has nothing to do directly with the position of women.⁶ The Bhils have a patrilineal society and as such the final authority rests with the males, the wife has to reside in husband's residence and the inheritance is traced through the male line of blood. Women are not allowed to take actual part in religious activities. But one has to remember that mere absence of rights does not indicate subservience, just as the

existence of these does not warrant their exercise.⁷ So though tribal women are believed to have more freedom and latitude in inter-sexual relation, they are often victims of desertion and they rarely resort to divorce which they can take to. The position of women is higher when they live in 'neolocal' or nuclear family. In a study it was found that 70.3 per cent of families in Udaipur were nuclear, whereas in Dungarpur 70.3 per cent of families were joint families. This fact has special relevance when one considers position of women.

Work Pattern and Literacy of Tribal women

As separate data are not available exclusively for Bhil women, an overview of tribal women in Udaipur district regarding work pattern, literacy rate and sex-ratio is brought out in the light of 1981 Census data.

In Udaipur district the sex-ratio of tribal population is more balanced in rural areas than the urban areas. In rural areas 50.1 per cent of total population is male and 49.9 per cent is female whereas in urban areas 55.5 per cent of the population is male and 44.5 per cent is female. We have not come across any explanation of this discrepancy of the sex-ratio between urban and rural areas. But in this context one would better take into consideration the facts that migration in urban areas for jobs are mostly among males leaving behind females in rural areas, may be in urban areas, females are subject to more advance conditions in job market and they may find urban life more terse and fast as compared to rural life. Any way all these need empirical verification which is outside the scope of the present paper.

Regarding literacy tribal women are far behind not only of tribal males but also far behind female literacy rate of the State. The literacy rate of tribal women is 5.3 per cent in rural areas whereas in urban areas the same is 11.98 per cent (Table I). The occupational pattern reflects the work pattern of tribal women of Udaipur district; the work implies only paid work.⁸ Main workers are those who worked for the major part of the year while marginal workers are those who worked any time of the year for less than 183 days in a year. As main workers women constitute only 13.4 per cent of total main workers in rural areas; in urban areas the percentage is higher, i.e., 18.1 whereas male workers constitute 86.7 per cent in rural areas and

81.2 per cent in urban areas respectively. Considering different types of activities as 'main workers' mostly tribal women are engaged as agricultural labourer constituting 41.8 per cent of total agricultural labourers and under the category of 'other workers' females constitute 22.6 per cent of total rural workers. But it is interesting that female workers are overwhelmingly large that is 93.6 per cent as marginal workers in rural areas of Udaipur. In other words most of the tribal women have to take up some work for a period which is less than six months to supplement the income of the family. Relatively less females are engaged in Household Industry, Manufacturing, Processing. Here it may be noted that, as given in Tribal development in 7th Five-Year Plan, for Tribal Development in Rajasthan,⁴ that tribals in Rajasthan do not have any tradition of rural crafts. Processing of forest produce and herbal plants, mineral development and self employment can be the only worthwhile activities in industrial sector.

As non-workers (any activity which was not offered for sale) tribal rural women constitute 59.1 per cent of total rural workers. Thus the study of work pattern reveals firstly, that majority of women are taking to paid work to supplement the income and secondly they are doing less skilled jobs than the males which reflected in the nature of job they are undertaking and, thirdly, although they are tending to not only household duties but producing or making something for domestic consumption was not considered as work, so they are categorised as non-workers⁵.

Tribal Women in VII Plan

The basic approach in VII Plan regarding women development programmes is 'to inculcate confidence among women and bring about an awareness of their own potential development and also of their right and privileges as the long term objective is to raise their economic and social status (P. 324, VII Five Year Plan, Vol.-II, 1985-90)⁶. The programmes for Scheduled Tribe women in the VII Plan is to remove backwardness of tribal women and for that, stress on economic development schemes have been given and while executing the programmes, it has to be ensured that tribal women are assisted under income generating programmes of Integrated Rural Development Programme (IRDP) and Special Central Assistance (SCA) and the voluntary agencies of women organisations. Moreover, tribal women representatives are to

be included in programme implementation committee.

As regards women development programme in Rajasthan no specific programme for the development of tribal women were taken up in the earlier plans. Some Departments undertook welfare programmes for women as a part of their routine work. In the VII Plan Women Development has been given a special emphasis and an outlay under Special Central Assistance of Rs. 10.00 lakhs has been provided for the various activities of Women Development in Tribal Sub-Plan (TSP) area. Under this programme, the training of women for vocation, health check-up, nutrition would be undertaken.

As agriculture would continue to be the main occupation for tribals, emphasis will be now on to produce 'low value and high value crops', agriculture is one such item. A pilot project was started in TSP area during 1982-83 for 3 years to benefit 300 tribal women. Under this scheme, 188 women were benefited during VI Plan period and this will continue during 1985-88. A scheme for training of nurses and compounders is in progress in Banswara in TSP and 30 tribal girls are to be trained in this scheme. Rural women are benefited through the programmes of Khadi and Village Industries. A sum of Rs. 160.02 lakhs has been provided during VII Plan Programme in TSP area for Khadi and Village Industries. As the literacy rate of tribal women is very low, a sum of Rs. 42.50 lakhs has been earmarked in the VII Plan for increasing literacy among scheduled tribe girls.

Keeping in view the plight of women a provision of Rs. 0.15 lakh has been made for the destitute homes at Banswara and Dungarpur for socially discarded women. An UNICEF-assisted programme in Banswara district is being implemented, the objective of the programme is to increase their income and to provide supporting services needs for income generating activities.

Conclusions

Thus a beginning has been made in the VII Plan to uplift the economic condition of the tribal women through education, skill formation, better health, etc. But taking education itself, tribal girls/women will be very slow to come out of their shell, as we have found earlier that although as 'main workers' females constitute

only 13 per cent of total workers, yet in reality the bulk of the burden of work is on women from a very young age, so mere formal education is not going to persuade the guardians of the females, who are mostly males, to send females for education. This expense of education would be more meaningful when it is linked to a vocation which can give them some earning. At present women take up any job which is available to her, as a result she is not able to acquire skill which is very important in the present condition.

Looking into the VII Plan programmes for TSP area for women, it is obvious that effort is being made to bring them in the main streams of the society, although a provision has been made to maintain 'tribal culture'. But contact with non-tribals has changed their ideas in many

respects as noted earlier as a result of which the burden on women has grown more as male member finds it derogatory to perform many activities which they consider now typically women's responsibility; earlier the society was more equal. In this process of development the emphasis would not only be on 'Preservation of tribal art and culture' but also on the good aspects of tribal life, and in particular, equal status of women. Sem junds have been earmarked for 'Preservation of tribal art and culture' in the VII Plan for tribals. Now for those are going to help in improving the status of tribal women is questionable. By only creating more job opportunities for tribal women the overall burden on women may be heavier which is in no way going to increase the welfare of the women. More emphasis needs to be placed on preservation of equal status of tribal women which is a special.

Table 1

Literacy and work pattern of Scheduled Tribes, both male and female, in Udaipur district, excluding municipal areas.

Sl. No.	Population of Scheduled Tribes							
	Rural				Urban			
	No. of persons	percentage	Male percentage	Female percentage	No. of persons	percentage	Male percentage	Female percentage
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1 Population ..	792,822	..	50.1	49.9	16,234	..	55.5	44.5
2 Literacy ..	46,382	5.7	94.7	5.3	2,983	18.4	88.1	11.9
3 Main workers ..	240,302	30.3	88.7	13.3	6,171	38.0	81.9	18.1
4 Cultivators ..	192,851	24.3	91.2	8.8	957	5.9	89.8	10.1
5 Agri. Labour ..	22,688	2.8	58.2	41.8	640	3.9	70.9	29.1
6 Household industry.	371	0.05	71.2	28.8	32	0.19	68.7	31.3
7 Other workers ..	24,812	3.1	77.3	22.7	4,642	27.9	81.9	18.1
8 Marginal workers	106,587	13.4	6.4	93.6	597	3.7	13.9	86.1
9 Non-workers ..	446,033	56.2	40.9	59.1	9,466	58.3	40.9	59.1

Source—Compiled from Census of India 1981, Series I, Part II, Government of India, Primary Census Abstract, Scheduled Tribe.

Feature of the primitive tribal life and these values need to be revived with proper depiction and demonstration. The tribals are hardy people and they have the capacity to face natural hazards and hardships. Their slowness to take up the new technologies may be due to the fact that apart from their religious beliefs and motives, these new methods do not suit their way of life.

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Attitude of tribal farmers towards credit

S. K. Rout and
B. Parasara

Indian farmers have yet to develop a scientific perception about the availability and utilization of credit. Sometimes even though credit is available, farmers are not in a position to utilise them. Hence a change in psychology of farmers about credit utilization is yet to be created which will lead to higher rate of production and economic growth.

Fact that needs consideration is that tribal development process has not yet built any mechanism for the maintenance of its momentum. Most of the tribal communities have not yet understood the implications of settled farming.

* In tribal communities of India the farmers are poor enough not to take any risk of investment on modern agricultural inputs. This is the very reason why easy availability of credit at reasonable rates of interest is important for the growth of scientific agriculture in those areas.

Analytical study reveals that the main cause of low yield is non-availability of finance for farming. So it is necessary to ensure satisfactory arrangements of credit for agriculture.

Keeping this in view, a study was undertaken with the following objectives:

1. To assess the attitude and perception of tribal farmers towards credit.
2. To identify the bottlenecks that are affecting the credit seeking and repayment habit of tribal farmers.

METHODOLOGY

Out of the 13 districts of Orissa, Keonjhar was selected as it is predominantly inhabited by tribal people. Five blocks from this district were selected and from these five blocks ten gram-panchayats were chosen. Selection of blocks and panchayats were done on random sampling technique. The study encompasses two hundred respondents distributed in twenty villages at the rate of ten respondents from each. The informations were recorded with the help of a structured schedule.

RESULTS AND DISCUSSION

TABLE 1

Attitude towards credit

Statements	M. S.	Rank
1. Seeking Credit does not contribute for the Development of Land ..	300	VI
2. It is wise to obtain credit for improvement in production ..	370	IV
3. Farmer cannot progress if he resorts to credit ..	272	VII
4. More credit means more investment in production ..	380	III
5. Only lender will be benefited ..	270	VIII
6. Credit obtained for agricultural purpose can be spent for other purposes.	385	II
7. Farmer who does not take credit remains to be traditional ..	337	V
8. Farmers have to take credit if they want to develop ..	392	I

A perusal of Table 1 reveals the tribal farmers perceive credit in order of importance as follows. Farmers require credit for their development credit obtained for agriculture can as well spent for any other purpose and more credit means more production. The least perceived items are only lenders will be benefited when money is borrowed from them, farmers can not progress if they resort to credit and taking credit does not contribute for development of land.

Findings at a glance, reveal that credit is perceived more favourable by tribal farmers. Ideal aspects of credit were highly valued as against unfavourable aspects.

TABLE 2
Perception about credit

Statements	M. S.	Rank
1. Loan is a burden	1.97	VI
2. Loan creates future financial complications	2.12	IV
3. It decreases Social Prestige	2.02	V
4. It helps in meeting unnecessary expenditure	2.02	V
5. Loan is a burden for future generation	2.30	III
6. Loan stands on the way of self dependency	2.32	II
7. It involves risk for repayment	2.57	I

Results presented in Table 2 reveals perception of respondents towards credit from various angles. Most of the tribal farmers feel that loan involves risk for repayment (2.57), stands on the way of self dependency (2.32), a burden for future generation (2.30) and create future financial complications (2.12) in order of rank. The least ranked item observed to be loan is a burden and it decreases social prestige.

The result depicts that among the negative values of credit, involvement of risk for repayment stands as important one. This is logical because most of the tribal farmers are poor, traditional in nature and their risk bearing capacity is less.

Barriers in obtaining credit

Very often planners and administrators wonder that in spite of availability of all sorts of credit facilities, many of the farmers do not make use of them. An attempt has been made to determine the barriers in obtaining credit as follows:

TABLE 3
Barriers in obtaining credit

Statement	Frequency	Percentage
1. Sophisticated process	160	75
2. Difficulty in repayment	174	87
3. Not timely available	184	92
4. Being a defaulter	116	58
5. Securing credit is expensive	136	68
6. Undue delay	152	76
7. Lack of security	70	36
8. No means to secure credit	24	12
9. High rate of interest	80	26
10. Malpractice adopted by lending agencies	56	28

Results reveal that untimely availability of credit is the most important obstacle in obtaining loan in tribal areas. Major obstacles found in order are, undue delay, difficulty in repayment, sophisticated process, expensive in seeking credit and defaulters of repayment.

Defaultation is a problem in Indian credit programme. Many tribal farmers fail to repay back credit in time. Accumulation of credit year after year leads to legal complicity and farmers do not get opportunity to take credit again.

CONCLUSION

Efforts were made to determine the attitude of tribals towards credit, their psychological perception and the reasons of being defaulted. The findings of study reveal that:

1. Tribals view credit as very essential for development of farm.
2. Tribal farmers are with the view that the credit obtained for one purpose can be spent for other purposes and higher credit leads to higher investment and production.
3. Tribal farmers perceive credit as risk for repayment, obstacle to self dependency and burden for future generation.
4. They express that loan is not available to them at the time of need as it is a sophisticated process and because of difficulty in repayment.

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Changing ecosystem of the Tribal with special reference to Deforestation and Forest Policy

Manoranjan Acharya

The study of ecology deals with the biota and its environment and the ecosystem which is the largest functional unit in ecology. The term ecosystem was formally proposed by Tansley, the plant ecologist, in 1935 as a general term for both the BIOME (the whole complex of organisms—both animals and plants—naturally living together as a sociological unit) and its Habitat. E. P. Odum, an ecologist defines the ecosystem as the basic functional unit of organisms and their environment, interacting with each other and within their own components. But, a more practical view of the ecosystem was suggested (especially at lower levels in micro-scale) by Fosberg in 1963 as a 'functioning interacting system composed of one or more organisms and their effective environment both physical and biological. Fosberg, further developed his concept of ecosystem by his statements: the description of an ecosystem may include its spatial relations; inventories of its physical features, its habits and ecological niches, its organisms and its basic resources of matter and energy; its patterns of circulation of matter and energy; the nature of its income (input) of matter and energy and the behaviour or trend of its entropy level'.

Robinson has defined ecosystem, "which clearly embraces and involves very complex relationships both of macro and micro-scales. It can think of simply as a balanced complex of living and non-living matter in a given unit of area".

From a structural view point, an ecosystem comprises 4 constituents such as: abiotic substances, producers, consumers, decomposers.

Forest is a living community of plants and animals. It is a product of the factors of locality like climate, soil, topography and biotic influence. The standing forests are the result of centuries of biotic evolution. The flora and fauna in it have evolved to present form and are better suited to the type of local climate. The complicated ways, in which the present forests have attained their present forms, are beyond the control of human beings. Man cannot create a forest once it is destroyed. Forests are the indigenous development of soil topography and biotic influence.

As forests constitute a living body it has definite growth pattern. The growth in forestry term is known as increment. So every year forests are adding something in terms of growth, to the original bulk. This growth is not keeping pace with the growing demand of the increasing population, for which more is extracted from the forest than what it can yield. This is the trend, which leads to rapid shrinkage of forests. Government of India has developed forest policies for preservation and conservation of forests scientifically so that forest should not shrink much. The Government of India's forest policies of 1894 and 1952 clearly emphasized the necessities of scientific management of forest and commercial forestry.

When the question of forestry, or forest management arises, we very often ignore or simply keep aside the age long practices of forest management of the tribals. Tribal communities have their own customary laws for

management of forest and forest resources and they are not reckless predators of forest resources like their non tribal counterparts. They used to regard forest as their own property and hence never exploit it to its devastating end.

In tribal societies a human group generally adopts a natural species of plant or animal as its totem and fosters ritual attitude towards that. Totem symbolises collective sentiment of the group that has adopted it and this sentiment is expressed in non totemic societies like Saora and Andaman Islanders. People express ritual attitudes to a range of natural species.

Durkheim (1915) and Radcliffe Brown (1952) saw totemism as a mechanism by which a system of social solidarity is established between man and nature. It is a way of bringing the natural world within the social and moral order of man. Totemism is not only a mode of symbolising social groups but also a way of domesticating nature. It is a proto type of religion.

The tribes of Orissa worship forests, hills, water-resources with the idea that these are controlled by the presiding deities of the said phenomena. They believe that unless they satisfy these spirit they will cause hazards and terror in their day to day existence.

There is a symbiotic relationship between forest and tribals through ages. They follow their customary practices as to which type of fruit or crop is to be eaten at which appropriate time of the year. Tribals collect bamboo shoots during rainy season as food item. While collecting the same they invariably spare the healthy one and pluck the weak one. If there are a number of healthy shoots around one stump, the Koyas leave one of the two and pluck up others. Their belief is that if there will be too many of them their growth will be stunted.

Tribals have their own taxonomies of flora and fauna. They are familiar with and have a thorough knowledge about the growth, maturity, efflorescence and decay of plants that are available in their own ecosystem. Their mode of management of plants and other forest resources is based on age old experiences. So their mode of management is not detrimental for the preservation of valuable species of plants. When the shifting cultivators clear up a fresh

patch of hill slope for cultivation invariably spare the useful plants like Sal (*Shorea Robusta*), Pissal (*Phercarpus Marsupium*), Teak (*Tecolona Grandis*), Herida (*Terminalia chebule*), Bahada (*terminalia Babica*), Shishu (*Delbergia Latifolia*), Mango (*Mangifera Indica*), Tentuli (*Tamarindus Indica*), and jack tree, etc.

Sal occupies a special position in the culture of all the tribes of Orissa. It is not only precious from the point of view of timber, but all its components are also equally valuable. Its leaves are used for preparation of leaf plates and tender twigs and used as tooth stick. Oil is extracted from its seeds and its bark and tender roots are used for preparation of medicines. It also yields resin, gum, lac and cocoon. It is a holy plant for all the northern Mundari tribes of Orissa, namely Santal, Munda, Ho, Bihor and Kharla. Every Santal village has a grove of Sal trees which is known as Jaherthan. This is the most important shrine of the Santal where all the Gods and Goddesses reside.

Likewise Mahua is also regarded as a holy plant by a number of Dravidian tribes of Orissa, namely Gond, Kondh, Otta and Parang, Gadaba and Koya. It is also treated as holy plant by Bardo, Saora and Didiyi were being the Southern Mundari tribes of Orissa treat this tree as sacred plant.

Forest provides the tribals food, beverages, oil, seed, medicine, timber, grass, fodder, lac, resin, fuel and many other useful articles. In the image of tribals, forest is a variegated depository of sustenance. Tribal life cannot be thought of without the forest. Forest is figured in his pleasure and pain as well as in his sufficiency and insufficiency.

Forest ecosystem has been changed to a considerable extent making the life of the forest dwelling people and the fate of the mankind miserable due to the following factors.

Changing Forest Ecosystem (Deforestation)

According to Hanson (1962) forest is "a stand of trees, growing close together with associated plants of various kinds". So, the phenomenon of a changing forest may be explained in terms of deforestation i.e. the loss of plant growth due to various reasons which brings about a change in its ecosystem as a whole. Some of the significant possible causes are as below:

1. Shifting cultivation

It is practised in some form or other in many places of the tropical countries of the world where the main habitation of the people are in the forest or hills. It is a cultivation by rotation in the hill slopes and hill tops by the method of slash and burn tillage.

Shifting cultivation may be defined as an agricultural system in which forests are cleared by cutting and subsequent burning and are cropped discontinuously. A large number of tribes practise shifting cultivation in various parts in India for their livelihood. Among them are most of the hill tribes in Assam especially Garo, Naga and Khasi, Mikir in Madhya Pradesh, Baiga and Korwa in Bihar, Kharis, Pahari and Todas in Tamil Nadu, Kondha, Gadabas, Sora, Paroja, Koya, Bhuiyan, Kols and Juangs in Orissa.

Due to shifting cultivation, the forest is not only thinned up, but also the forest land is converted into open fields in course of time, devoid of forest growth.

2. Cutting of timbers for economic benefits

At present, many forests are found to be baled due to the frequent cutting of timbers for selling in the market. It gives economic benefits to a small segment of the population while affecting the interest of the vast majority. Besides, the Government have also been collecting sizeable revenue through auction sale of reserved forests, thus encouraging the auction holders to exploit the forest resources to the maximum. Very often under the grab of the legitimacy of these auction purchase take resort to indiscriminate and illegal felling of trees.

3. Due to natural calamity

Lastly, natural calamities like floods, cyclones, etc. are also responsible for deforestation. Very often cyclones result in the breaking of tall plants, thus deteriorating the plant growth. Besides, excessive solar radiation and rainfall also check plant growth by destructing thick vegetation.

In sum, these are the various agents responsible for the change of the forest ecosystem and thus give a new dimension to the problems arising out of the changing ecosystem.

Forest ecosystem for centuries had been inextricably bound up with the life of the tribal communities. As forest dweller, they are the real custodian of forest. With the introduction

of forest policies, tribals have been estranged from the forest and necessary Government Machinery was developed for scientific management of forest so that national income can be increased.

Scientific management of forest envisages proper assessment of the annual increment of the forest so that this can be harvested annually keeping the growing stock intact. It is not possible to remove the annual increment from each and every plant. The annual increment in a body of forest is estimated scientifically and their quantity is removed from the said body of forest either by selective felling or by clear felling. This is otherwise known as scientific commercial forestry in natural forest.

In scientific commercial forestry, there is considerable interference with the natural ecological process. In scientific management the forests which are always in minority are favoured against the majority, hence man's efforts, are to keep the natural ecological progression in check.

Such interference is more pronounced where entire patches of forest are clear felled. It is less where selective fellings are carried out. But with the present system of forest management the forest exploitation privilege generally goes to the non-tribal people to whom the total vegetation is of little interest and they exploit the forest to the last and of their privilege. At the same time they do not forget to fulfil their vested interest in manipulating the Government Machinery by which the objectives of scientific management is being hampered.

There is another aspect of scientific commercial forestry, which also has vast influence on forest ecosystem. Only a few species out of the vast multitude of plant community in a natural forest have been found to be more valuable than the others. The forester's effort is to grow these trees in a large volume and as fast as possible. He often finds it much easier to achieve this by removing the existing forest growth and plant these species in pure stands.

Tribal people living in particular geographical region develop a deep sense of attachment with certain flora of their locality. The trees like Sal, Mohua, Kendu, etc. have considerable importance to their economy. They satisfy a large range of their daily needs from these trees, when a new species is introduced

removing the indigenous flora, tribal people react to it. It has been reported in Singhbhum district when Bihar State Forest Development Corporation began to replace the Sal, Mohua and other trees with teak in miscellaneous forest in which tribals claim forest right, the tribals look towards it with suspicion. This action of the Corporation was strongly opposed and counter acted with symbolically cutting down the teak sapling in the nearby nursery. They feel that teak plantation by-pass their economy as it generates wealth and income elsewhere, except the wages they get from the Corporation. In some cases these trees encroaching their farm land, according to them not a blade of grass grows under a teak plant.

Effects of the changing forest eco-system on population :

The impact of the changing forest eco-system on population may be discussed under the following heads:—

I. Effects on Soil

It decreases the fertility of soil by removing the top soil on account of soil erosion—Achlorophyllous plants and animals directly or indirectly depend upon green plants. They are also dependent on non-green plants for carbon dioxide. These green plants modify the environment by shading the area using water and minerals in the soil and providing organic materials to the soil, thus increasing the fertility of soil. But when the vegetation is thin, the function of the thin plant growth can not be adequate so as to develop the fertility of soil to the desired level.

II. Effects on Human Population

(a) *It affects climate*—The thick vegetation serves as a blanket for incoming radiation and thus it reduces temperature on the earth, as a result of which cooler days and warmer nights are felt. But, due to deforestation, the temperature becomes high and leads to desertification of soil, thus affecting the climate. Due to arid climate there are plants and animals who cannot adapt to the new environment and would ultimately die. In this process several plants and animal species have vanished from the earth and the extinction of several others is threatened.

(b) *It causes severe soil erosion*—Due to heavy rain, excess water flows on the surface of the soil and violent blowing winds remove the particles from the soil. Loss of fertile top soil is called soil erosion.

(c) *It makes a deficiency to subsistence economy*—The people in the forest areas mostly maintain their livelihood through collection of fruits, seeds, roots, tubers, leaves and hunting of wild animals. Besides, forest produces like honey, lac, wax, resin, etc. are also collected by them and sold in the market for cash economy. Due to deforestation, the forests are thinned and as a result forest based food-stuff cannot be obtained therefrom. Thus, the people are forced to lead a life of poverty and misery. This situation ultimately brings an economic deficiency among those people.

(d) *It causes heavy floods*—Thick plantation serve as a check against the rapid speed of water flow during floods. Deforestation, on the contrary, allows the water to come down with much speed and velocity during rainfall, thereby causing floods in rivers, which again bring insupportable miseries to the riverian population.

(e) *It causes siltings of reservoirs*—During floods, water brings down with it heavy quantities of eroded soil and stones. These are deposited on the beds of reservoirs and gradually those beds get silted up, thereby the irrigation potentials of reservoirs is greatly reduced, thus bringing an adverse effect on the economic lives of the people.

(f) *It causes emigration*—Deforestation compels the population depending on forest based food-stuff to move out of their native places in search of food. The forest eco-system largely fulfils the primary needs of the forest dwelling people, which cannot be possible due to the destruction of the forest growth. They are thrown out of their traditional occupation of collecting forest produce; consuming a part of it by themselves and selling the remaining part in the open market for other daily necessities. This results in emigration of a large chunk of the population to urban and semi-urban areas seeking employment to eke out a living. As a result of this, their traditional cultural unity in the group life gets disintegrated and the age old strong social thread binding them together gets snapped.

(g) *It decreases aesthetic beauty*—Every human being is psychologically inclined towards the love of nature and its beauty. Deforestation results in the loss of the natural beauty of the forest by making it devoid of its greeneries and depleting its flora and fauna. Thereby man's traditional aesthetic quest amidst the greeneries of the forest is defeated.

The Simlipal Hill Area Development Corporation has been instituted in integrated approach for the development of the tribals as well as the forest. The objectives of the corporation may be the economic rehabilitation of the tribes, introduction of horticulture, soil conservation and making national park a tourist resort. It is observed that the forest contractors are taking leases from the corporation in the name of local tribes who have got preference in getting land for cultivation. Indiscriminate bulldozing of land by contractors in the vicinity of the hill, causing considerable damage to the forest. After making the forest land cultivable they have started potato cultivation. They are using fertilizers and pesticides so extensively that wild animals are reported to be dying after taking water from the streams. If this is the state of affair, the ecological problems will be a cause against the tribes as well as to the forest ecosystem.

Another very significant problem arises due to the introduction of Wild Life Preservation Act. Most of the tribes of Orissa have ceremonial hunting once in the year which is known as "Chali Parab". The ceremonial hunting, each and every household is represented and if they succeed to hunt an animal in this ceremonial hunting they believe that fortune is in favour of them. This hunting rather determines their fate throughout the year. That is why they raise their voice many times against this act as they are debared from such act, but they achieve their objectives by illegal means.

For various reasons forests are fast shrinking whereas the population depending on forest is fast growing. As a result of which pressure on forest and forest produce is mounting with the present system of management, consciously or unconsciously more is extracted from the forest than what it can yield. This leads to rapid change in forest eco system.

It is quite pertinent to measure the socio-political and socio-economic conditions of the people against the back drop of a changing forest eco system since these are the barometers of measuring the cohesive status of society. In this changing eco system the intertwined fabrics constituting the social net work is dismantled and the cultural unity in families, social groups is disintegrated due to insufficient availability of economic source. In the last, the forest used to be regarded by natives as a store house to fulfil their both primary and secondary needs. Due to deforestation, various

deleterious effects like soil erosion, floods, etc. are caused which again brings in its strain not only the depletion of the forest based food stuff but also ruinous effect in diminishing the agricultural production and productivity. Ultimately this reduces their standard of living. Large scale and continuous migration of these people to urban and semi-urban areas seeking employment creates other concomitant problems like population explosion, slums, etc. in those areas. Forest resources are one of the many national assets. Once these are lost, maladjustment in the economic and social life of the people takes place and the traditional cohesive social balance is violently disturbed.

In sum, deforestation leads to a total change in the social, economic and cultural life of the people and forces them to lead a life of poverty and misery. So the remedial measures in the lines suggested below should be taken to halt the process of deforestation.

Suggested remedial measures

From the above discussions it will be seen that the changing forest eco system caused due to deforestation is apt to do immense damage to mankind as a whole. Greater damages are still ahead if it is not halted. The following are the few suggested remedial measures:—

(1) Deforestation is largely caused due to insufficient availability of firewood in villages. Village forest should be developed on Government lands in villages to cater to the firewood needs of the people. Quick growing species should be planted to give quick results under the social forestry scheme.

(2) Farm forestry should be developed over the lands of individual farmers so that they may, besides meeting their firewood requirements, sell the surplus fire wood in the market. Government should encourage the scheme of farm forestry by granting subsidy if necessary, so that besides maintaining ecological balance, it could become available for commercial enterprise.

(3) Our national policy to cover 33 per cent of the land base with forest growth should be strictly implemented. Since the present coverage is less than 12 per cent, effective steps should be taken by Government to take up plantations on a massive scale. Since the existing Government machinery cannot

cope with the work load, viable commercial undertaking may be set up for plantation purposes.

(4) It is generally seen that every year crores of saplings are planted; but no evaluation is made as to how many of them actually survive. As experience shows, most of them do not survive. Close follow up action after planting operation to ensure maximum survival of these seedlings should be taken.

(5) The village community should be closely associated with maintenance of village forests by appointing their own watch and ward staff. Some money may be given to them as incentive. This will reduce Governmental expenditure in entrusting a large number of forest guards, foresters, etc. who are quite ineffective in maintaining these forests in the face of non-co-operation from the village community.

(6) A system of awards right from the Grama Panchayat level up to the national level may be introduced so as to encourage the village community for proper up-keep of their village forests.

(7) Research should be made to find out an alternative cheaper source of construction materials in place of wood so that pressure on timber exploitation from the forest may be reduced to a considerable extent.

(8) Adequate legislative and administrative measures should be under taken for protection of wild life.

(9) At the block level a separate Extension Officer on forestry should be appointed to be in charge of creating a consciousness amongst the people through extension methods about the utility of forest and its role to maintain the ecological balance. He could also be in charge of execution of different forestry schemes in the Block area.

(10) The anxiety expressed by the present Central Government for maintaining the eco-system by way of opening a separate Department of Forestry and Wild Life Conservation should be taken as a cue by the State Government who should also open similar separate department at their respective levels.

(11) Last but not the least, a national movement should be undertaken by the people, different voluntary organisations and political parties for ensuring the preservation of the forest eco system not only in the national interest alone, but also in the interest of mankind as a whole.

(12) The policy of conservation and management of forest resources should not go independent of policy of cultural conservation. Both the policy of Tribal development and forest development should be implemented in such a way the interest of the former should not be hampered at the cost of the latter or vice versa.

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Tribal Development Programmes in Phulbani, Orissa: A Review

S. N. Tripathy

The backwardness of Orissa is characterised by low income levels, higher dependence of population on poorly developed agriculture, larger proportion of Scheduled Tribes and Scheduled Caste population, lack of urbanisation and inadequate infrastructure. The tribal population constitutes nearly 23 per cent of the total population of the State. One of the most backward districts of Orissa is Phulbani with 39 per cent of tribal population. The majority of them belong to the Khonds who work as labourers⁽¹⁾. Abject poverty and inequality in the distribution of wealth and income are deep rooted in the tribal district of Phulbani. In the Pre-independence era the policy of isolation and apathy of the Britishers, caused great hardships to the tribals. In fact they were exploited by the Zamindars, landlords moneylenders and contractors⁽²⁾.

Tribal Sub-Plan—After independence, the Government took various measures to eliminate the socio-economic exploitation of the tribals. Steps were also taken to ameliorate their condition by combating the problems of poverty, malnutrition, ill-treatment by suitable legislative measures and planned economic development. The new approach to tribal development was evolved during the Fifth Five-Year Plan period, with focus on development of tribals, the new strategy adopted was the preparation of Sub-Plan for tribal areas with more than 50 per cent tribal concentration. The main thrust of tribal Sub-Plan (Otherwise known as Integrated Tribal Development Programme) is to develop infrastructure like communication, education, mini-irrigation and income generation of tribal families living below the poverty line. The prime aim of Tribal

Development Programme is to raise the economic standard of tribals by providing them the basic minimum requirements. On the basis of this concept, 19 Integrated Tribal Development Programme areas were identified in the State.

The sub-plan strategy not only aims at bridging the gap of development between sub-plan areas and other areas but also achievement of the objective of improving the qualities of life of the tribals⁽³⁾.

In the district Phulbani, there are two Integrated Tribal Development Agencies functioning. Baliguda ITDA covers 9 Blocks of Baliguda Subdivision and Phulbani ITDA covers 3 Blocks of Khondmals Subdivision. A sum of Rs. 48.99 lakhs has been utilised by Baliguda ITDA and Rs. 23.95 lakhs by Phulbani ITDA in development of infrastructure under income-generating scheme. During Sixth Plan period 1,120 families have been assisted with total investment of Rs. 141.67 lakhs. The importance of the Tribal Development Programmes in improving the tribal economy in Phulbani district is examined briefly under the following heads.

(a) Agriculture

About 80 per cent of the people depend upon agriculture in this district. The cultivable area of this district is 2.37 lakh hectares out of which cultivated area is 2.09 lakh hectares. The extent of high, medium and low lands is 1.42 lakh hectares, 0.40 lakh hectares and 0.27 lakh hectares respectively. Paddy is the major cereal crop of Phulbani district which is grown over an area of 1.01 lakh hectares. To popularise the use

of improved seeds, free distribution of seed minkits has been taken as a strategy for agricultural development. Besides, extension work is done to motivate the farmers to divert high marginal lands from paddy to other crops to derive higher income. During 1984-85 an area of 1,638 hectares of land has been diverted from paddy to oil seeds and pulses. During the year 1985-86 an area of 75,165 hectares has been brought under pulses and 68,828 hectares under oil seeds as part of the national objectives of increasing production of pulses and oil seeds. (4)

(b) Animal husbandry

The performance under animal husbandry covers assistance to tribals in rearing milch cattle, opening poultry and goateries units, provision of health covers to animals etc. This programme has a special significance for the weakest sections of the community comprising the landless and marginal farmers. In order to uplift the standard of living of the poor tribals, this programme distributes the milch animals, poultry units, goateries units at 50 per cent subsidy to the tribals. There are about 100 centres, 25 veterinary dispensaries functioning in the district.

(c) Irrigation

Irrigation plays a crucial role in increasing the food production, bringing more area under cultivation and in raising the level of income and employment. The district of Boudh-Khandma has no major irrigation project. Hardly 13 per cent of the cultivated area is under irrigation as against the State average of 26 per cent. There is only one medium irrigation project which irrigates about 49,000 acres in Kharif and 5,000 acres in Rabi in Boudh and Haisbhanga Blocks. (5) A medium irrigation project known as Bendaipili Irrigation Project is under progress in Kotgarh Block. 34 lift irrigation points are in operation in this district with an arround area of 2,940 hectares spreading over four blocks, namely, Kottamal, Boudh, Haisbhanga and Tumulibaidh. The slow progress of the lift irrigation programme in Phulbani is due to the fact that the ground water resources are limited. Energisation of dug-wells has not succeeded due to limited progress in rural electrification in the district.

Soil Conservation

Soil and water conservation programmes are of paramount significance in view of undulated and hilly terrains of the district. During the Sixth plan period, 735 076 hectares of lands were

covered under land development programme. Under Cashew plantation 1,291 hectares, 'Sisal' plantation 40 hectares, coffee plantation 113 hectares were covered under soil conservation programme. (6)

(e) Horticulture

Horticulture has a special place in the tribal development programme. Because of soil erosion the tree cover is fast disappearing. An extensive programme of Horticulture is ideally suitable to the needs and habits of the tribals with congenial climatic condition for plantation works. Palmarosa cultivation is very profitable and suitable to the climatic situation of the district which can be grown in marginal land. The Orissa University of Agriculture and Technology has been assigned with the task for taking up palmarosa cultivation in 8 hectares. During the year 1985-86, mixed orchard plantation works have been undertaken covering 512 beneficiaries of E. R. R. P. and I. R. D. P. in 1,024 acres of lands. (7)

(f) Supply of Drinking water

Out of 4,658 villages and hamlets of the district, 1,239 have been identified as problem villages in respect of drinking water-supply. By the end of Sixth Plan period 900 villages were fully covered by providing tube wells and 167 villages were partly covered leaving 172 identified villages yet to be covered. During the said period, 2,216 tube wells have been installed. (8)

(g) Education

Education is the key to tribal development. Education is not only an input for economic development but is essential for providing inner strength to the community in order to meet the new challenges. The district Phulbani has about 27 per cent of literacy as against the State average of 34.2 per cent. During Sixth Plan period 3.26 lakh boys and 1.60 lakh girls in the age group of 6 to 14 have been enrolled in Primary and Middle Schools. During the said period, 34,762 adults, 26,440 males and 8,322 females have been made literate through 1,895 centres opened. For arround development of Scheduled Caste and Scheduled Tribe population (which constitutes 18.67 per cent and 39.18 per cent of the total population respectively) the Harijan & Tribal Welfare Department has established 21 institutions including both residential and non-residential.

(h) Forestry

Forest area covers 62.90 per cent of the geographical area of the district. But because of indiscriminate felling of trees and 'Podu'

cultivation practised by the tribals there is a considerable deforestation. Emphasis is laid by Government an afforestation programme and accordingly Government have instructed to earmark 20 per cent of N.R.E.P. and R.L.E.G.P. grant for this purpose. Afforestation programme is being taken up in order to maintain ecological balance and economically help the tribal people who depend upon forest collection for their livelihood along with generating employment opportunities. The agro-climatic condition of the district is congenial for rubber plantation and therefore, during the year 1984-85, 2 hectares of area have been covered by rubber plantation on experimental basis. By the said period, 2,952 hectares have been covered under social forestry programme.

(i) Co-operation

To provide a package of services under one roof to the tribal L.A.M.P. Co-operative Societies are playing a commendable role in Phurbun.

The district has 148,750 agricultural families out of which 122,260 families including 27,345 Scheduled Caste families and 51,453 Scheduled Tribe families have been brought under the co-operative fold. During the period 1981 to 1985, Co-operative Societies have financed Rs. 914.17 lakhs under crop loans (9).

(j) Communication

The district lacks adequate communication facilities. The hilly terrain which is criss-crossed by numerous hill-streams make many pockets inaccessible. The district has a total length of 7,190 Kms. of surfaced roads out of which only one-tenth is metalled. Out of 4,397 inhabited villages 987 are linked by all weather roads. (10) This is the only district in the State which has no railway line and recently survey of new rail-line connecting Khurda Road to Bolangir which will pass through the district has been taken up. This railway line when completed,

will meet a long felt need of the people and act as a catalyst for development of this under developed district.

A perusal of the study brings into light that despite tribal development plans, the advantages of plans have not percolated to the tribal poor and weaker sections of the community. Under plan schemes, the Government of Orissa had allotted Rs. 4,391.01 lakhs in the district during 1974-75 to 1984-85. It comes to only 2.9 per cent of the total State's allocations of plan resources which is the lowest place in the State and therefore, resulted in widespread poverty.

It is therefore, suggested that credit and marketing facilities should be streamlined in order to provide consumption-cum-production credit and to provide support price for tribal produce. The co-operative structure is to be designed to provide integrated credit and other package services to the tribals.

Universalisation of elementary education has to be ensured through providing a package of services and innovation in organisation, institutions and content.

Lack of adequate transport facilities has been the chief obstacle for the rapid economic development of the district. Hence, infrastructure development should support specific economic activities like all-weather links to market centres, rural electrification helping develop lift irrigation potential and household and village industries.

Indeed, to make the tribals lead a better life and thereby, to enter into the main-stream, a fresh look at the tribal problems and a new strategy for their development is inevitable.

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